

Revisions to Monthly Natural Gas Data

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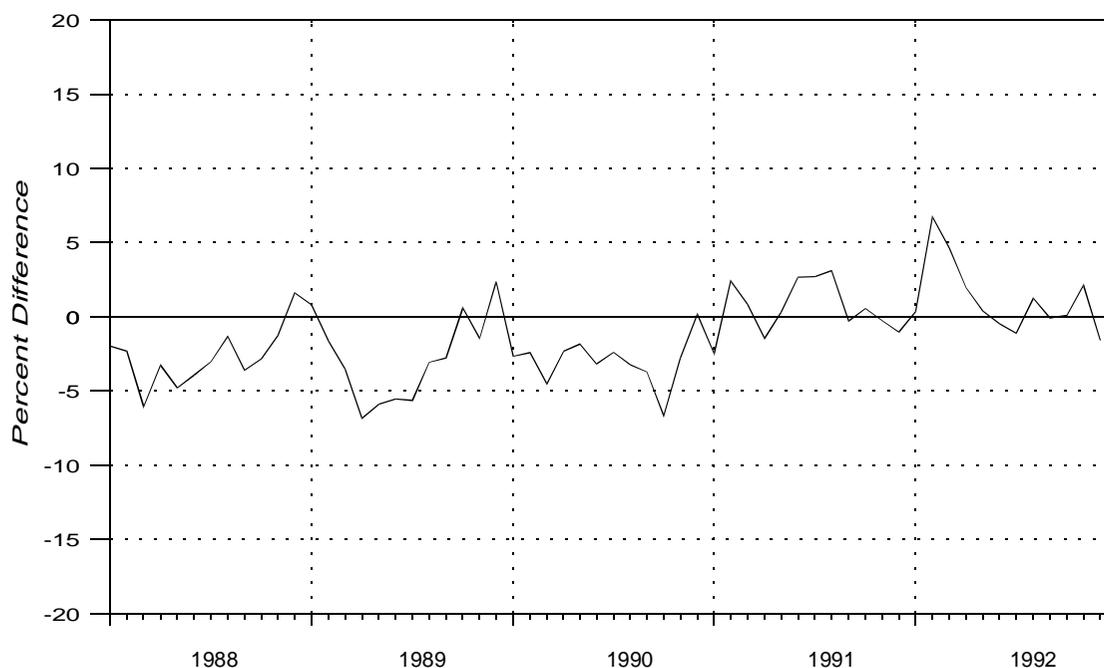
The Energy Information Administration (EIA) publishes monthly data for the supply and disposition of natural gas in the United States in the *Natural Gas Monthly*. These data are preliminary when initially published. Some of the monthly volumes and prices

are estimates developed by EIA staff. Others are estimated or taken from submitted reports. Table FE1 lists the methodologies for deriving the monthly data to be published initially for the components of supply and disposition.

Table FE1. Methodology for Reporting Initial Monthly Natural Gas Supply and Disposition Data

Components	Reporting Methodology
Supply and Disposition	
Marketed Production	Estimated from Historical Data
Extraction Loss	Derived from Marketed Production
Dry Production	Marketed Production minus Extraction Loss
Withdrawals from Storage	Reported on Form EIA-191
Supplemental Gaseous Fuels	Derived from Supply Estimates and Coal Gasification Information
Imports	Estimated from National Energy Board of Canada Information and Liquefied Natural Gas Information
Additions to Storage	Reported on Form EIA-191
Exports	Estimated from Industry Trends and Liquefied Natural Gas Information
Current-Month Consumption	Estimated from Historical Month-to-Month Percent Changes
Prior-Month Consumption	
Lease and Plant Fuel	Derived from Marketed Production
Pipeline Fuel	Derived from Estimates for Lease and Plant Fuel and Deliveries to Consumers
Deliveries to Consumers	
Residential	Estimated from Reports to the Sample Survey Form EIA-857
Commercial	Estimated from Reports to the Sample Survey Form EIA-857
Industrial	Estimated from Reports to the Sample Survey Form EIA-857
Electric Utilities	Reported on Form EIA-759
Average Prices	
Wellhead Price	Estimated from Historical Data
City Gate Price	Reported to the Sample Survey Form EIA-857
Deliveries to Consumers	
Residential	Reported to the Sample Survey Form EIA-857
Commercial	Reported to the Sample Survey Form EIA-857
Industrial	Reported to the Sample Survey Form EIA-857
Electric Utilities	Reported on FERC Form 423

Figure FE1. Percent Difference Between Initial and Final Monthly Values for Marketed Production, 1988-1992



Source: Energy Information Administration, *Natural Gas Monthly*, 1988 through 1992.

This article discusses the methodologies for reporting monthly data and the differences that occurred between the initial (first) monthly supply and disposition data for the United States published during 1988, 1989, 1990, 1991, and 1992 and the final monthly data published for those years. Although the utility of future estimates cannot be judged solely on the basis of the quality of past estimates, the EIA is providing information about these differences to assist users in evaluating the usefulness of preliminary national data for 1993 and subsequent years.

The EIA also continuously conducts programs of quality assurance for data reporting. Greater accuracy in data reporting improves the quality of estimates.

Initial and Final Monthly Values

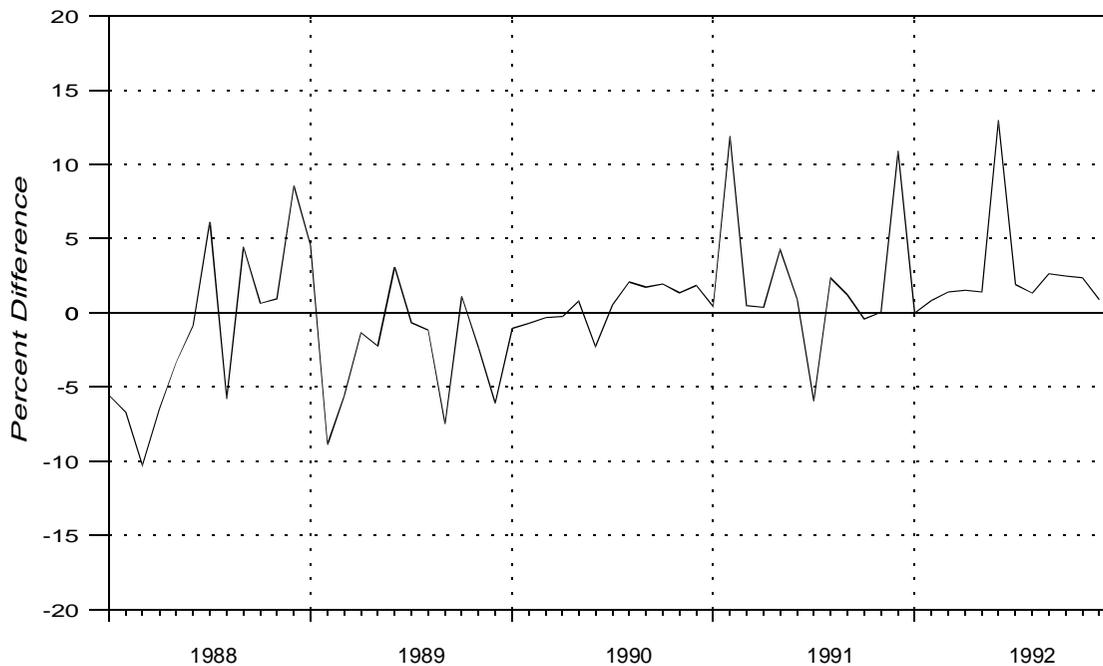
The monthly numbers discussed in this article are published in Tables 1, 2, 3, and 4 of the *Natural Gas Monthly*. Each issue shows an initial number for the most current month and monthly data back through the 2 previous years. The initial estimate generally appears 2 months after the publication issue month. The current-month consumption estimate is routinely revised in the following month. (See discussion below.) Data for months in prior years become final after publication of

the *Natural Gas Annual*. Initial and final monthly volumes are shown in Tables FE2 and FE3, and initial and final monthly prices in Table FE4.

Monthly numbers are revised each year so that their totals for the 12 months will match the annual totals in the *Natural Gas Annual*, and the revised monthly numbers are published in the following issue of the *Natural Gas Monthly*. In some instances, monthly data are reported on an annual survey, and the monthly estimates are revised to the reported data. When monthly data are not reported, the percentage distribution across months for the monthly estimates is applied to the final annual number to derive final monthly estimates. The most current monthly natural gas data, including any revisions, are also published in the EIA report *Monthly Energy Review*.

The EIA's quality assurance program for natural gas reporting includes comparisons of current-year annual data with prior-year data. These comparisons frequently result in corrections to the prior-year data. The verification of 1992 annual data against the 1991 data resulted in revisions to 1991 data. In this article, all of the final 1991 data, except exports and imports data, may differ from the final data shown in this same article in the April 1993 issue of the *Natural Gas Monthly*. Generally, any revisions were small volume amounts.

Figure FE2. Percent Difference Between Initial and Final Monthly Values for Current-Month Consumption, 1988-1992



Source: Energy Information Administration, *Natural Gas Monthly*, 1988 through 1992.

Throughout this discussion, many sources of data and methods of estimation are referenced. Appendices A (Explanatory Notes), B (Data Sources), and C (Statistical Considerations) of the *Natural Gas Monthly* provide further information about data sources, estimation procedures, annual adjustments, and sample design. These sources may also be helpful in evaluating the monthly data.

Supply and Disposition

Natural gas supply consists of dry gas production, withdrawals from storage, supplemental gaseous fuels, and imports. Natural gas disposition consists of additions to storage, exports, and current-month consumption. Marketed production and consumption are the best indicators of market activity in the natural gas industry. Figure FE1 is a graph of the percentage differences between final and initial marketed production values, and Figure FE2 is a graph for consumption percentage differences.

Table FE2 shows the initial and final values for natural gas supply and disposition in the United States in 1988, 1989, 1990, 1991, and 1992. The percentage difference is calculated by taking the difference between the ini-

tial value and the final value, dividing it by the final value, and multiplying by 100. Positive percentage differences indicate that the initial value is larger than the final value; negative ones mean the initial value is smaller than the final value.

Marketed Production

Marketed production for the current month is estimated by the EIA from historical data. When voluntary reports filed with the Interstate Oil and Gas Compact Commission (IOGCC) by most of the gas-producing States become available, usually 2 months after the initial values are published, the monthly marketed production data are revised.

State offices provide the natural gas production reports filed monthly with the IOGCC and annually with the EIA on the Form EIA-627, "Annual Quantity and Value of Natural Gas Report." In some States, these reports are not available at the time that the EIA must close its data files for publication of the *Natural Gas Annual*, and production data are taken from the EIA annual publication *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*. When the data reported on Form EIA-627 are subsequently received, any necessary revisions are made, and the revised data are published in the *Natural Gas Monthly*.

For 1988 and 1989, respondents to the Form EIA-627 reported only annual production data. The percentage distribution of the initial estimates across the 12 months was applied to this annual number to give final monthly estimates. Generally, there was little change in 1988 and 1989 in comparing the final numbers to the initial estimates for monthly marketed production (Table FE2), and the final values were larger than the initial values in nearly every month.

Beginning with the collection of annual production data for 1990, Form EIA-627 respondents provide production numbers by month and a total for the year. Thus, the revisions in 1990, 1991, and 1992 show the difference between the initial monthly estimates and Form EIA-627 final monthly reports. All of the percentage differences in 1990 (except in December) were negative, indicating a pattern similar to other years. In December, the initial and final numbers were virtually the same.

As shown in Table FE2, the percentage differences between initial estimates and final marketed production volumes in 1991 and 1992 were generally smaller than in previous years. Some were positive and some were negative. Most differences were less than plus or minus 2 percent.

Current-Month Consumption

Consumption for the most current month is a component of the disposition of natural gas and is an estimate based on percentage changes. An average percentage change over the previous 3 years is applied to the previous month's data to estimate a value for the current month's consumption. Consumption of natural gas fluctuates across the months of the year due to the seasonal variation in the weather, with the greatest fluctuations occurring in the winter months because of heating requirements. Since the estimate for current-month consumption is based on an average activity over the past 3 years, the current-month consumption estimate may show large revisions if the weather for the current year is markedly colder or warmer than that of the previous 3 years.

To make the estimate, an average percentage change is calculated by averaging the percentage changes from the previous to current months for the corresponding time period during the previous 3 years. For example, to estimate consumption for March 1994, the percentage changes in consumption from February 1991 to March 1991, from February 1992 to March 1992, and from February 1993 to March 1993 are calculated. These three figures are then averaged, and this average change is applied to the February 1994 consumption volume to estimate March 1994 consumption. The February 1994 consumption volume in this issue is the

prior month's consumption volume, which is based on deliveries to consumers reported on a sample survey plus estimates for lease fuel, plant fuel, and pipeline fuel.

The current month's consumption volumes are always replaced in the following month with an estimate based primarily on reported volumes. (See the discussion on consumption in prior months.) The percent differences between initial and final current-month consumption estimates are shown in Figure FE2.

Dry Gas Production and Extraction Loss

Extraction loss is estimated by applying the annual ratio of extraction loss to marketed production to each month's marketed production volume. The ratio is calculated using the most recently available annual data. Dry production of natural gas is then derived by subtracting the extraction loss estimate from the marketed production estimate. Final monthly marketed production numbers are adjusted to conform to data from the Form EIA-627, which is filed by the appropriate State agencies of the 33 gas-producing States.

Monthly estimates for dry production show a pattern similar to that for marketed production since dry production estimates are primarily driven by the marketed production estimates.

Extraction loss monthly revisions generally were larger in 1989 and 1990 than they were in 1988. The increase in adjustment size occurred because the ratio of annually reported extraction loss to annually reported marketed production, used to make the estimates, had changed during the period, but was not properly updated in the estimation procedures for 1989 and 1990. The ratio was recalculated for estimating 1991 extraction loss data, and the percentage differences between initial and final values in 1991 are smaller than those shown in 1989 and 1990.

In 1992, the estimates for extraction loss improved in the latter months of the year. The ratio used to make the estimates in these months was updated because the annual data used to calculate it became available. The updated ratio reflected changes in the industry. (The ratio of extraction loss to marketed production was 4.5 percent in 1991 and 4.7 percent in 1992.)

Storage Withdrawals and Additions

For 1988 through 1990, monthly natural gas storage information was reported on the identical EIA and Federal Energy Regulatory Commission (FERC) monthly Forms EIA-191 and FERC Form 8, "Underground Gas Storage Report." Interstate natural gas

**Table FE2. Initial Estimates and Revisions for Monthly Natural Gas Supply and Disposition
in the United States, 1988-1992**
(Volumes in Billion Cubic Feet)

Month	1988			1989			1990		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Marketed Production									
January	1,631	1,664	-2.0	1,620	1,607	0.8	1,644	1,689	-2.7
February	1,480	1,515	-2.3	1,460	1,484	-1.6	1,467	1,503	-2.4
March	1,484	1,580	-6.1	1,518	1,573	-3.5	1,523	1,595	-4.5
April	1,400	1,447	-3.2	1,396	1,499	-6.9	1,478	1,513	-2.3
May	1,410	1,481	-4.8	1,429	1,519	-5.9	1,501	1,529	-1.8
June	1,353	1,408	-3.9	1,375	1,456	-5.6	1,440	1,487	-3.2
July	1,383	1,426	-3.0	1,400	1,484	-5.7	1,477	1,513	-2.4
August	1,428	1,447	-1.3	1,428	1,473	-3.1	1,469	1,518	-3.2
September	1,316	1,365	-3.6	1,363	1,402	-2.8	1,403	1,457	-3.7
October	1,440	1,482	-2.8	1,481	1,472	0.6	1,477	1,583	-6.7
November	1,492	1,511	-1.3	1,511	1,533	-1.4	1,536	1,580	-2.8
December	1,619	1,593	1.6	1,630	1,592	2.4	1,630	1,627	0.2
Extraction Loss									
January	78	76	2.6	76	70	8.6	76	69	10.1
February	70	69	1.4	68	64	6.3	69	62	11.3
March	71	72	-1.4	71	68	4.4	71	66	7.6
April	67	66	1.5	65	65	0.0	69	62	11.3
May	67	68	-1.5	67	66	1.5	70	63	11.1
June	64	64	0.0	64	63	1.6	67	61	9.8
July	66	65	1.5	66	64	3.1	69	62	11.3
August	68	66	3.0	67	63	6.3	69	62	11.3
September	62	62	0.0	64	60	6.7	66	60	10.0
October	67	67	0.0	69	64	7.8	69	65	6.2
November	70	69	1.4	71	66	7.6	72	65	10.8
December	76	73	4.1	76	72	5.6	76	67	13.4
Dry Production									
January	1,553	1,588	-2.2	1,544	1,537	0.5	1,568	1,620	-3.2
February	1,410	1,446	-2.5	1,392	1,420	-2.0	1,398	1,441	-3.0
March	1,413	1,508	-6.3	1,447	1,505	-3.9	1,453	1,529	-5.0
April	1,333	1,380	-3.4	1,331	1,434	-7.2	1,409	1,451	-2.9
May	1,343	1,414	-5.0	1,362	1,453	-6.3	1,431	1,466	-2.4
June	1,289	1,344	-4.1	1,311	1,393	-5.9	1,373	1,426	-3.7
July	1,317	1,361	-3.2	1,334	1,420	-6.1	1,408	1,451	-3.0
August	1,360	1,380	-1.4	1,361	1,410	-3.5	1,400	1,456	-3.8
September	1,254	1,303	-3.8	1,299	1,342	-3.2	1,337	1,397	-4.3
October	1,373	1,416	-3.0	1,412	1,408	0.3	1,408	1,518	-7.2
November	1,422	1,443	-1.5	1,440	1,467	-1.8	1,464	1,515	-3.4
December	1,543	1,520	1.5	1,554	1,520	2.2	1,554	1,560	-0.4
Withdrawals from Storage									
January	546	586	-6.8	397	427	-7.0	329	356	-7.6
February	452	462	-2.2	548	614	-10.7	340	345	-1.4
March	249	259	-3.9	319	369	-13.6	250	267	-6.4
April	79	92	-14.1	121	138	-12.3	109	141	-22.7
May	35	46	-23.9	41	44	-6.8	75	44	70.5
June	26	36	-27.8	23	20	15.0	40	41	-2.4
July	31	42	-26.2	47	29	62.1	27	26	3.8
August	30	52	-42.3	27	29	-6.9	37	40	-7.5
September	31	46	-32.6	34	39	-12.8	36	36	0.0
October	88	92	-4.3	85	96	-11.5	61	66	-7.6
November	173	159	8.8	198	228	-13.2	144	151	-4.6
December	368	397	-7.3	729	822	-11.3	467	490	-4.7
Supplemental Fuels									
January	19	12	58.3	16	11	45.5	16	11	45.5
February	16	11	45.5	15	10	50.0	14	9	55.6
March	14	10	40.0	14	10	40.0	14	10	40.0
April	12	8	50.0	12	8	50.0	13	9	44.4
May	11	7	57.1	12	8	50.0	11	8	37.5
June	11	7	57.1	11	7	57.1	11	8	37.5
July	9	7	28.6	11	8	37.5	12	9	33.3
August	11	7	57.1	11	8	37.5	11	8	37.5
September	10	6	66.7	10	7	42.9	11	8	37.5
October	11	8	37.5	13	9	44.4	11	8	37.5
November	12	9	33.3	13	9	44.4	13	9	44.4
December	15	11	36.4	17	12	41.7	11	11	0.0

See footnotes at end of table.

Table FE2. Initial Estimates and Revisions for Monthly Natural Gas Supply and Disposition in the United States, 1988-1992
(Volumes in Billion Cubic Feet) -- Continued

Month	1991			1992		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Marketed Production						
January	1,643	1,686	-2.6	1,669	1,663	0.4
February	1,517	1,483	2.3	1,566	1,467	6.7
March	1,619	1,607	0.7	1,619	1,547	4.7
April	1,508	1,531	-1.5	1,548	1,518	2.0
May	1,526	1,522	0.3	1,563	1,557	0.4
June	1,489	1,451	2.6	1,508	1,515	-0.5
July	1,504	1,465	2.7	1,547	1,564	-1.1
August	1,516	1,471	3.1	1,541	1,522	1.2
September	1,459	1,464	-0.3	1,507	1,508	-0.1
October	1,588	1,580	0.5	1,610	1,608	0.1
November	1,594	1,600	-0.4	1,622	1,588	2.1
December	1,654	1,673	-1.1	1,630	1,656	-1.6
Extraction Loss						
January	71	76	-6.6	69	77	-10.4
February	66	67	-1.5	64	68	-5.9
March	70	72	-2.8	67	72	-6.9
April	66	69	-4.3	64	71	-9.9
May	66	69	-4.3	64	73	-12.3
June	65	65	0.0	62	71	-12.7
July	65	66	-1.5	64	73	-12.3
August	66	66	0.0	63	71	-11.3
September	64	66	-3.0	68	70	-2.9
October	70	71	-1.4	73	75	-2.7
November	70	72	-2.8	73	74	-1.4
December	73	75	-2.7	74	77	-3.9
Dry Production						
January	1,572	1,610	-2.4	1,600	1,586	0.9
February	1,451	1,417	2.4	1,502	1,398	7.4
March	1,549	1,535	0.9	1,552	1,475	5.2
April	1,442	1,462	-1.4	1,484	1,447	2.6
May	1,460	1,453	0.5	1,499	1,485	0.9
June	1,424	1,385	2.8	1,446	1,444	0.1
July	1,439	1,399	2.9	1,483	1,491	-0.5
August	1,450	1,405	3.2	1,478	1,451	1.9
September	1,395	1,398	-0.2	1,439	1,437	0.1
October	1,518	1,509	0.6	1,537	1,533	0.3
November	1,524	1,528	-0.3	1,549	1,514	2.3
December	1,581	1,597	-1.0	1,556	1,579	-1.5
Withdrawals from Storage						
January	530	682	-22.3	571	624	-8.5
February	260	409	-36.4	436	463	-5.8
March	218	297	-26.6	369	397	-7.1
April	240	104	130.8	140	142	-1.4
May	30	58	-48.3	50	44	13.6
June	20	42	-52.4	40	35	14.3
July	46	75	-38.7	53	42	26.2
August	54	82	-34.1	62	46	34.8
September	48	78	-38.5	51	40	27.5
October	69	103	-33.0	79	70	12.9
November	327	360	-9.2	267	282	-5.3
December	424	461	-8.0	544	587	-7.3
Supplemental Fuels						
January	10	12	-16.7	5	12	-58.3
February	9	10	-10.0	11	11	0.0
March	10	11	-9.1	11	11	0.0
April	9	9	0.0	10	10	0.0
May	9	9	0.0	9	9	0.0
June	8	8	0.0	8	8	0.0
July	9	9	0.0	8	8	0.0
August	9	9	0.0	9	8	12.5
September	8	8	0.0	9	8	12.5
October	10	10	0.0	10	10	0.0
November	9	9	0.0	11	9	22.2
December	10	11	-9.1	12	11	9.1

See footnotes at end of table.

Table FE2. Initial Estimates and Revisions for Monthly Natural Gas Supply and Disposition in the United States, 1988-1992
(Volumes in Billion Cubic Feet) -- Continued

Month	1988			1989			1990		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Imports									
January	113	139	-18.7	99	119	-16.8	186	140	32.9
February	107	117	-8.5	113	110	2.7	130	118	10.2
March	120	113	6.2	101	113	-10.6	118	116	1.7
April	97	96	1.0	110	110	0.0	120	123	-2.4
May	101	94	7.4	107	108	-0.9	118	123	-4.1
June	100	93	7.5	109	104	4.8	111	117	-5.1
July	129	100	29.0	110	101	8.9	122	120	1.7
August	102	94	8.5	106	108	-1.9	122	118	3.4
September	117	95	23.2	113	117	-3.4	120	120	0.0
October	113	106	6.6	125	123	1.6	120	142	-15.5
November	95	121	-21.5	127	123	3.3	124	140	-11.4
December	118	127	-7.1	136	145	-6.2	148	156	-5.1
Additions to Storage									
January	25	47	-46.8	45	53	-15.1	92	96	-4.2
February	49	50	-2.0	28	32	-12.5	85	71	19.7
March	103	99	4.0	93	106	-12.3	119	128	-7.0
April	164	165	-0.6	166	183	-9.3	183	194	-5.7
May	294	288	2.1	285	327	-12.8	316	304	3.9
June	291	280	3.9	356	380	-6.3	329	335	-1.8
July	306	300	2.0	365	377	-3.2	325	337	-3.6
August	296	288	2.8	321	362	-11.3	321	330	-2.7
September	317	314	1.0	283	325	-12.9	284	295	-3.7
October	212	202	5.0	192	225	-14.7	214	217	-1.4
November	148	117	26.5	91	105	-13.3	136	139	-2.2
December	35	62	-43.5	50	52	-3.8	72	71	1.4
Exports									
January	5	5	0.0	5	7	-28.6	6	14	-57.1
February	5	5	0.0	7	7	0.0	5	8	-37.5
March	5	6	-16.7	8	11	-27.3	6	11	-45.5
April	5	6	-16.7	6	11	-45.5	6	6	0.0
May	5	4	25.0	4	8	-50.0	4	6	-33.3
June	4	8	-50.0	6	9	-33.3	8	6	33.3
July	5	5	0.0	6	9	-33.3	8	5	60.0
August	5	6	-16.7	6	9	-33.3	8	5	60.0
September	5	7	-28.6	6	9	-33.3	8	7	14.3
October	4	6	-33.3	6	10	-40.0	8	6	33.3
November	5	7	-28.6	7	8	-12.5	8	6	33.3
December	5	9	-44.4	6	8	-25.0	8	7	14.3
Current Month Consumption									
January	2,065	2,187	-5.6	2,116	2,024	4.5	2,110	2,132	-1.0
February	1,901	2,038	-6.7	1,830	2,009	-8.9	1,820	1,833	-0.7
March	1,675	1,867	-10.3	1,837	1,947	-5.6	1,787	1,793	-0.3
April	1,369	1,464	-6.5	1,561	1,582	-1.3	1,593	1,597	-0.3
May	1,259	1,302	-3.3	1,320	1,350	-2.2	1,397	1,386	0.8
June	1,160	1,170	-0.9	1,239	1,202	3.1	1,253	1,282	-2.3
July	1,249	1,177	6.1	1,213	1,221	-0.7	1,276	1,269	0.6
August	1,151	1,222	-5.8	1,203	1,217	-1.2	1,321	1,294	2.1
September	1,148	1,099	4.5	1,093	1,182	-7.5	1,283	1,261	1.7
October	1,240	1,232	0.6	1,354	1,339	1.1	1,411	1,384	2.0
November	1,467	1,453	1.0	1,531	1,568	-2.4	1,564	1,543	1.4
December	1,976	1,820	8.6	2,025	2,157	-6.1	1,976	1,940	1.9

See footnotes at end of table.

Table FE2. Initial Estimates and Revisions for Monthly Natural Gas Supply and Disposition in the United States, 1988-1992
(Volumes in Billion Cubic Feet) -- Continued

Month	1991			1992		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Imports						
January	147	163	-9.8	135	165	-18.2
February	126	138	-8.7	142	175	-18.9
March	139	151	-7.9	154	180	-14.4
April	151	144	4.9	177	176	0.6
May	128	141	-9.2	173	174	-0.6
June	125	133	-6.0	156	162	-3.7
July	132	135	-2.2	163	167	-2.4
August	128	127	0.8	167	175	-4.6
September	128	134	-4.5	173	166	4.2
October	125	157	-20.4	179	176	1.7
November	123	169	-27.2	167	210	-20.5
December	127	181	-29.8	186	209	-11.0
Additions to Storage						
January	59	115	-48.7	57	60	-5.0
February	41	112	-63.4	53	45	17.8
March	99	129	-23.3	73	74	-1.4
April	196	234	-16.2	159	161	-1.2
May	296	331	-10.6	320	344	-7.0
June	307	326	-5.8	358	384	-6.8
July	266	299	-11.0	352	373	-5.6
August	256	290	-11.7	358	380	-5.8
September	279	304	-8.2	336	362	-7.2
October	229	258	-11.2	261	271	-3.7
November	115	150	-23.3	94	88	6.8
December	92	125	-26.4	56	58	-3.4
Exports						
January	7	10	-30.0	12	16	-25.0
February	6	11	-45.5	9	14	-35.7
March	9	10	-10.0	10	23	-56.5
April	8	9	-11.1	15	18	-16.7
May	6	8	-25.0	10	19	-47.4
June	8	7	14.3	9	18	-50.0
July	6	8	-25.0	14	16	-12.5
August	7	10	-30.0	18	18	0.0
September	8	11	-27.3	22	18	22.2
October	7	14	-50.0	24	19	26.3
November	7	15	-53.3	24	19	26.3
December	8	18	-55.6	20	19	5.3
Current Month Consumption						
January	2,312	2,299	0.6	2,249	2,239	0.4
February	2,143	1,912	12.1	2,004	2,031	-1.3
March	1,850	1,840	0.5	1,983	1,926	3.0
April	1,550	1,542	0.5	1,661	1,685	-1.4
May	1,395	1,337	4.3	1,474	1,418	3.9
June	1,211	1,199	1.0	1,301	1,264	2.9
July	1,207	1,283	-5.9	1,315	1,311	0.3
August	1,305	1,274	2.4	1,344	1,264	6.3
September	1,248	1,231	1.4	1,244	1,249	-0.4
October	1,414	1,419	-0.4	1,447	1,368	5.8
November	1,693	1,691	0.1	1,625	1,672	-2.8
December	2,229	2,009	11.0	2,185	2,119	3.1

^a The percent change is the initial value minus the final value, divided by the final value.

Note: The monthly volumes may not sum to total volume because the initial estimates in the early months of the year may have been revised before the annual total is first published.

Source: Energy Information Administration, *Natural Gas Monthly*, 1988 through 1992.

**Table FE3. Initial Estimates and Revisions for Monthly Natural Gas Consumption
in the United States, 1988-1992**
(Volumes in Billion Cubic Feet)

Month	1988			1989			1990		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Lease and Plant Fuel									
January	89	102	-12.7	106	95	11.6	109	112	-2.7
February	81	93	-12.9	97	88	10.2	97	100	-3.0
March	82	97	-15.5	100	93	7.5	102	106	-3.8
April	78	88	-11.4	93	88	5.7	98	100	-2.0
May	78	91	-14.3	95	89	6.7	99	101	-2.0
June	74	86	-14.0	91	86	5.8	95	98	-3.1
July	78	87	-10.3	94	88	6.8	98	100	-2.0
August	93	88	5.7	95	87	9.2	97	100	-3.0
September	87	83	4.8	90	82	9.8	93	96	-3.1
October	95	91	4.4	98	87	12.6	102	105	-2.9
November	99	92	7.6	100	90	11.1	103	105	-1.9
December	107	98	9.2	106	97	9.3	108	108	0.0
Pipeline Fuel									
January	53	63	-15.9	51	57	-10.5	55	64	-14.1
February	47	55	-14.5	51	57	-10.5	49	54	-9.3
March	44	53	-17.0	48	54	-11.1	48	56	-14.3
April	40	46	-13.0	42	49	-14.3	44	54	-18.5
May	42	49	-14.3	44	51	-13.7	47	55	-14.5
June	40	47	-14.9	44	50	-12.0	44	54	-18.5
July	42	49	-14.3	49	50	-2.0	49	54	-9.3
August	43	49	-12.2	49	50	-2.0	49	55	-10.9
September	42	47	-10.6	47	48	-2.1	47	52	-9.6
October	43	49	-12.2	49	49	0.0	48	50	-4.0
November	45	51	-11.8	50	50	0.0	49	53	-7.5
December	50	56	-10.7	66	65	1.5	59	58	1.7
Delivered to Consumers									
Residential									
January	756	852	-11.3	754	751	0.4	794	788	0.8
February	736	755	-2.5	739	743	-0.5	638	642	-0.6
March	598	597	0.2	651	646	0.8	550	552	-0.4
April	398	400	-0.5	418	414	1.0	398	400	-0.5
May	264	258	2.3	260	257	1.2	246	248	-0.8
June	154	152	1.3	161	155	3.9	160	161	-0.6
July	125	123	1.6	131	129	1.6	129	126	2.4
August	116	114	1.8	123	121	1.7	124	121	2.5
September	126	125	0.8	141	139	1.4	136	132	3.0
October	233	232	0.4	227	229	-0.9	217	214	1.4
November	394	391	0.8	400	405	-1.2	381	376	1.3
December	640	631	1.4	789	791	-0.3	642	630	1.9
Commercial									
January	343	424	-19.1	374	376	-0.5	397	408	-2.7
February	337	392	-14.0	375	380	-1.3	329	342	-3.8
March	323	320	0.9	342	342	0.0	300	308	-2.6
April	220	223	-1.3	228	233	-2.1	235	242	-2.9
May	159	158	0.6	161	159	1.3	155	162	-4.3
June	116	118	-1.7	119	121	-1.7	124	127	-2.4
July	110	109	0.9	111	110	0.9	125	126	-0.8
August	120	113	6.2	110	110	0.0	119	118	0.8
September	113	113	0.0	113	113	0.0	124	124	0.0
October	157	156	0.6	149	152	-2.0	153	155	-1.3
November	222	225	-1.3	225	231	-2.6	230	229	0.4
December	319	320	-0.3	389	391	-0.5	339	338	0.3

See footnotes at end of table.

Table FE3. Initial Estimates and Revisions for Monthly Natural Gas Consumption in the United States, 1988-1992
(Volumes in Billion Cubic Feet) -- Continued

Month	1991			1992		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Lease and Plant Fuel						
January	109	102	6.9	111	104	6.7
February	100	90	11.1	104	92	13.0
March	106	98	8.2	108	97	11.3
April	100	93	7.5	103	95	8.4
May	102	93	9.7	104	97	7.2
June	99	89	11.2	100	95	5.3
July	100	90	11.1	103	98	5.1
August	101	90	12.2	97	95	2.1
September	97	89	9.0	93	94	-1.1
October	106	97	9.3	100	101	-1.0
November	106	97	9.3	101	99	2.0
December	110	101	8.9	101	104	-2.9
Pipeline Fuel						
January	58	74	-21.6	78	68	14.7
February	47	61	-23.0	72	62	16.1
March	51	58	-12.1	69	58	19.0
April	48	49	-2.0	60	51	17.6
May	48	42	14.3	51	42	21.4
June	44	37	18.9	45	37	21.6
July	42	40	5.0	47	39	20.5
August	64	40	60.0	45	37	21.6
September	50	38	31.6	45	37	21.6
October	70	44	59.1	49	41	19.5
November	53	54	-1.9	60	50	20.0
December	67	64	4.7	75	64	17.2
Delivered to Consumers						
Residential						
January	848	844	0.5	781	786	-0.6
February	668	664	0.6	696	696	0.0
March	575	573	0.3	579	574	0.9
April	375	373	0.5	432	431	0.2
May	230	229	0.4	252	251	0.4
June	147	148	-0.7	163	162	0.6
July	127	126	0.8	132	132	0.0
August	118	118	0.0	126	126	0.0
September	139	138	0.7	137	137	0.0
October	228	225	1.3	241	241	0.0
November	462	459	0.7	444	437	1.6
December	660	658	0.3	719	717	0.3
Commercial						
January	433	434	-0.2	409	410	-0.2
February	357	359	-0.6	372	366	1.6
March	309	310	-0.3	317	315	0.6
April	226	225	0.4	251	250	0.4
May	153	154	-0.6	168	170	-1.2
June	119	119	0.0	123	125	-1.6
July	127	125	1.6	122	122	0.0
August	114	113	0.9	121	121	0.0
September	124	121	2.5	120	121	-0.8
October	169	163	3.7	164	166	-1.2
November	261	256	2.0	258	256	0.8
December	357	350	2.0	374	381	-1.8

See footnotes at end of table.

Table FE3. Initial Estimates and Revisions for Monthly Natural Gas Consumption in the United States, 1988-1992
(Volumes in Billion Cubic Feet) -- Continued

Month	1988			1989			1990		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Industrial									
January	618	578	6.9	587	598	-1.8	611	614	-0.5
February	560	574	-2.4	564	570	-1.1	576	564	2.1
March	653	596	9.6	598	602	-0.7	605	587	3.1
April	581	507	14.6	550	563	-2.3	620	603	2.8
May	586	507	15.6	557	544	2.4	610	577	5.7
June	569	487	16.8	539	530	1.7	535	544	-1.7
July	467	480	-2.7	535	525	1.9	554	536	3.4
August	502	514	-2.3	540	539	0.2	586	557	5.2
September	510	499	2.2	534	532	0.4	584	556	5.0
October	539	522	3.3	518	568	-8.8	638	604	5.6
November	545	543	0.4	602	603	-0.2	617	596	3.5
December	579	577	0.3	656	643	2.0	653	631	3.5
Electric Utility									
January	167	168	-0.6	146	147	-0.7	144	146	-1.4
February	170	170	0.0	171	172	-0.6	131	132	-0.8
March	203	204	-0.5	209	211	-0.9	182	184	-1.1
April	199	199	0.0	233	235	-0.9	197	199	-1.0
May	239	240	-0.4	249	251	-0.8	239	244	-2.0
June	280	280	0.0	259	260	-0.4	295	297	-0.7
July	328	328	0.0	317	320	-0.9	325	326	-0.3
August	345	344	0.3	306	310	-1.3	346	342	1.2
September	233	233	0.0	274	268	2.2	300	301	-0.3
October	182	182	0.0	248	254	-2.4	256	256	0.0
November	151	150	0.7	187	189	-1.1	185	185	0.0
December	137	137	0.0	170	171	-0.6	175	175	0.0

See footnotes at end of table.

pipelines with storage facilities reported on the FERC Form 8. All other storage operators reported on the Form EIA-191. The annual total of monthly storage volumes reported on the Form EIA-191 is compared with the annual storage volume reported on the Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," and all differences are resolved with the respondents.

The Form EIA-191 was revised for the reporting of 1991 data. Beginning in that year, all storage operators, including interstate pipeline storage operators, file the revised form. The new form collects storage data by State, county, and storage field.

Differences between final and initial reported storage volume data are primarily caused by two factors. First, the monthly storage volumes are taken from reports for underground facilities only, whereas the annual storage volume data also include reports for liquefied natural gas (LNG) facilities. Second, and more importantly, respondents frequently estimate the volumes they report and sometimes revise them later. Thus, differences in storage volume data are primarily due to revisions by respondents. These data are published as reported by the respondents without any statistical estimation or adjustment by the EIA.

Storage withdrawals and additions best illustrate the heating season requirements that characterize the natural gas industry. During the heating season, November through March, the monthly withdrawals are large and can climb to more than 400 billion cubic feet. In the off-season, they usually drop to less than 100 billion cubic feet. Correspondingly, monthly additions are highest from April through October. Revisions to off-season withdrawals (summer months) and off-season additions (winter months) generally tend to be small volume amounts that result in large percentage differences.

In 1988 the differences for monthly withdrawals in the summer months were large percentages due to the small quantities involved. However, those for the heating season months varied only from negative 7 percent to positive 9 percent. For 1989, the percentage differences for withdrawals during the winter months ranged from a negative 14 percent in March to a negative 7 percent in January. Large percentage differences occurred in April and May of 1990. In the other months of that year, the percentage differences were no larger than 8 percent.

During 1988, for all months except January, November, and December, when additions to storage are small, the

Table FE3. Initial Estimates and Revisions for Monthly Natural Gas Consumption in the United States, 1988-1992
(Volumes in Billion Cubic Feet) -- Continued

Month	1991			1992		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Industrial						
January	694	672	3.3	690	701	-1.6
February	616	591	4.2	634	644	-1.6
March	635	607	4.6	673	674	-0.1
April	635	586	8.4	636	628	1.3
May	558	571	-2.3	627	620	1.1
June	532	546	-2.6	587	578	1.6
July	566	572	-1.0	599	587	2.0
August	597	586	1.9	591	582	1.5
September	593	582	1.9	613	586	4.6
October	630	626	0.6	635	608	4.4
November	642	627	2.4	661	641	3.1
December	676	665	1.7	693	677	2.4
Electric Utility						
January	171	173	-1.2	169	169	0.0
February	146	146	0.0	170	170	0.0
March	192	193	-0.5	208	208	0.0
April	215	216	-0.5	229	229	0.0
May	249	249	0.0	236	236	0.0
June	260	260	0.0	266	266	0.0
July	330	330	0.0	333	334	-0.3
August	326	328	-0.6	302	303	-0.3
September	262	263	-0.4	274	274	0.0
October	263	263	0.0	213	213	0.0
November	197	198	-0.5	189	189	0.0
December	170	170	0.0	176	176	0.0

^a The percent change is the initial value minus the final value, divided by the final value.

Note: The monthly volumes may not sum to total volume because the initial estimates in the early months of the year may have been revised before the annual total is first published.

Source: Energy Information Administration, *Natural Gas Monthly*, 1988 through 1992.

adjustments to final storage additions data ranged from negative 2 percent to positive 5 percent. In 1989, all percentage differences for storage additions were negative and ranged from negative 15 percent to negative 3 percent. Except for the month of February, at 20 percent, the percentage differences in 1990 ranged from negative 7 percent to positive 4 percent.

Because of the revision of the form, the filings on the Form EIA-191 were delayed during the early months of 1991. Data initially published for storage withdrawals and injections were estimated by the EIA in January, February, March, and April. Some of the percentage differences between the initial estimates and final volumes were large for these months. For the remainder of the year, the initial volumes were taken from the EIA-191 filings. In 1992, differences in withdrawals in the winter months ranged from negative 9 percent in January to negative 5 percent in November. Except for February 1992 at 18 percent, all differences for additions in 1992 ranged from negative 7 percent to positive 7 percent.

Imports and Exports

Initial monthly exports of natural gas are estimated based on analysis of the industry and shipments of liquefied natural gas. Initial monthly import data are estimated by the same techniques plus data from the National Energy Board of Canada. From 1984 to 1992, pipeline imports of gas came only from Canada. (Small amounts of gas were imported from Mexico in late 1993.)

Final monthly export and import data are reported on the Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." Although this is an annual form, it requires the reporting of data by month. The final data are published every year in a feature article in the *Natural Gas Monthly* in July or August following the end of the reporting year. The feature article provides detailed information about natural gas imports and exports.

Table FE4. Initial Estimates and Revisions for Monthly Natural Gas Average Price in the United States, 1988-1992
(Prices in Dollars per Thousand Cubic Feet)

Month	1988			1989			1990		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Wellhead Price									
January	1.83	1.96	-6.6	1.87	1.99	-6.0	2.13	2.23	-4.5
February	1.82	1.84	-1.1	1.88	1.81	3.9	1.87	1.85	1.1
March	1.74	1.70	2.4	1.69	1.69	0.0	1.67	1.55	7.7
April	1.68	1.59	5.7	1.62	1.56	3.8	1.60	1.49	7.4
May	1.66	1.52	9.2	1.66	1.61	3.1	1.53	1.47	4.1
June	1.57	1.53	2.6	1.62	1.65	-1.8	1.53	1.48	3.4
July	1.49	1.56	-4.5	1.63	1.65	-1.2	1.50	1.49	0.7
August	1.60	1.62	-1.2	1.63	1.61	1.2	1.54	1.51	2.0
September	1.60	1.53	4.6	1.63	1.55	5.2	1.59	1.56	1.9
October	1.61	1.68	-4.2	1.61	1.58	1.9	1.80	1.76	2.3
November	1.72	1.76	-2.3	1.72	1.66	3.6	2.00	1.94	3.1
December	1.86	1.89	-1.6	1.91	1.92	-0.5	2.05	2.04	0.5
City Gate Price									
January	2.89	2.91	-0.7	3.13	3.17	-1.3	3.25	3.25	0.0
February	2.93	2.95	-0.7	3.06	3.10	-1.3	3.12	3.10	0.6
March	2.83	2.87	-1.4	2.88	2.89	-0.3	2.95	2.95	0.0
April	2.74	2.79	-1.8	2.81	2.83	-0.7	2.84	2.84	0.0
May	2.67	2.75	-2.9	2.93	2.94	-0.3	2.81	2.81	0.0
June	2.77	2.87	-3.5	2.97	2.98	-0.3	3.00	3.00	0.0
July	2.72	2.87	-5.2	3.08	3.08	0.0	3.03	3.03	0.0
August	2.80	2.92	-4.1	3.04	3.04	0.0	2.91	2.91	0.0
September	2.99	3.05	-2.0	2.99	2.99	0.0	2.92	2.92	0.0
October	2.88	2.92	-1.4	2.84	2.84	0.0	2.81	2.81	0.0
November	2.94	2.98	-1.3	2.97	2.98	-0.3	3.14	3.14	0.0
December	3.07	3.08	-0.3	3.09	3.10	-0.3	3.19	3.19	0.0
Delivered to Consumers									
Residential Price									
January	5.08	5.08	0.0	5.42	5.41	0.2	5.41	5.43	-0.4
February	5.09	5.09	0.0	5.39	5.38	0.2	5.61	5.65	-0.7
March	5.19	5.18	0.2	5.44	5.45	-0.2	5.58	5.60	-0.4
April	5.41	5.35	1.1	5.53	5.54	-0.2	5.62	5.64	-0.4
May	5.80	5.87	-1.2	5.91	5.93	-0.3	5.97	6.00	-0.5
June	6.45	6.50	-0.8	6.52	6.58	-0.9	6.55	6.56	-0.2
July	6.72	6.74	-0.3	6.90	6.92	-0.3	6.99	7.04	-0.7
August	6.82	6.92	-1.4	7.06	7.07	-0.1	7.04	7.08	-0.6
September	6.71	6.79	-1.2	6.81	6.80	0.1	6.81	6.90	-1.3
October	5.91	5.95	-0.7	6.09	6.06	0.5	6.09	6.14	-0.8
November	5.51	5.56	-0.9	5.56	5.56	0.0	5.65	5.69	-0.7
December	5.35	5.39	-0.7	5.30	5.30	0.0	5.59	5.62	-0.5
Commercial Price									
January	4.86	4.60	5.7	4.87	4.81	1.2	4.99	4.97	0.4
February	4.66	4.69	-0.6	4.86	4.80	1.3	5.04	5.05	-0.2
March	4.69	4.69	0.0	4.83	4.79	0.8	4.94	4.92	0.4
April	4.75	4.71	0.8	4.85	4.77	1.7	4.84	4.82	0.4
May	4.65	4.61	0.9	4.71	4.64	1.5	4.65	4.63	0.4
June	4.59	4.53	1.3	4.65	4.57	1.8	4.59	4.56	0.7
July	4.52	4.48	0.9	4.70	4.65	1.1	4.46	4.45	0.2
August	4.28	4.37	-2.1	4.65	4.61	0.9	4.55	4.55	0.0
September	4.43	4.41	0.5	4.71	4.67	0.9	4.57	4.55	0.4
October	4.46	4.53	-1.5	4.65	4.61	0.9	4.66	4.66	0.0
November	4.67	4.69	-0.4	4.75	4.71	0.8	4.80	4.81	-0.2
December	4.79	4.78	0.2	4.86	4.81	1.0	4.92	4.92	0.0

See footnotes at end of table.

**Table FE4. Initial Estimates and Revisions for Monthly Natural Gas Average Price
in the United States, 1988-1992**
(Prices in Dollars per Thousand Cubic Feet) -- Continued

Month	1991			1992		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Wellhead Price						
January	1.95	1.96	-0.5	1.69	1.74	-2.9
February	1.57	1.62	-3.1	1.35	1.26	7.1
March	1.46	1.49	-2.0	1.42	1.35	5.2
April	1.47	1.50	-2.0	1.46	1.42	2.8
May	1.42	1.48	-4.1	1.55	1.51	2.6
June	1.31	1.43	-8.4	1.60	1.62	-1.2
July	1.31	1.34	-2.2	1.77	1.55	14.2
August	1.37	1.43	-4.2	1.84	1.84	0.0
September	1.50	1.59	-5.7	2.10	1.92	9.4
October	1.73	1.82	-4.9	2.25	2.38	-5.5
November	1.83	1.89	-3.2	2.33	2.13	9.4
December	1.93	2.00	-3.5	2.20	2.07	6.3
City Gate Price						
January	3.08	3.08	0.0	2.93	2.90	1.0
February	2.94	2.94	0.0	2.75	2.70	1.9
March	2.78	2.78	0.0	2.61	2.61	0.0
April	2.75	2.74	0.4	2.74	2.74	0.0
May	2.77	2.76	0.4	2.90	2.90	0.0
June	2.86	2.86	0.0	3.00	3.00	0.0
July	2.76	2.74	0.7	2.99	3.01	-0.7
August	2.80	2.78	0.7	3.15	3.18	-0.9
September	2.91	2.91	0.0	3.26	3.23	0.9
October	3.09	2.92	5.8	3.49	3.50	-0.3
November	2.92	2.92	0.0	3.28	3.33	-1.5
December	3.06	3.05	0.3	3.16	3.17	-0.3
Delivered to Consumers						
Residential Price						
January	5.49	5.54	-0.9	5.52	5.53	-0.2
February	5.55	5.56	-0.2	5.53	5.54	-0.2
March	5.60	5.60	0.0	5.48	5.50	-0.4
April	5.88	5.90	-0.3	5.61	5.62	-0.2
May	6.28	6.28	0.0	6.14	6.15	-0.2
June	6.94	6.97	-0.4	6.81	6.84	-0.4
July	7.23	7.23	0.0	7.23	7.27	-0.6
August	7.35	7.36	-0.1	7.39	7.45	-0.8
September	6.92	6.92	0.0	7.12	7.15	-0.4
October	6.15	6.20	-0.8	6.46	6.52	-0.9
November	5.51	5.51	0.0	5.98	6.02	-0.7
December	5.51	5.51	0.0	5.71	5.74	-0.5
Commercial Price						
January	4.91	4.94	-0.6	5.16	4.85	6.4
February	4.97	4.94	0.6	5.04	5.03	0.2
March	4.93	4.89	0.8	4.77	4.77	0.0
April	4.89	4.87	0.4	4.80	4.77	0.6
May	4.71	4.65	1.3	4.59	4.59	0.0
June	4.79	4.80	-0.2	4.72	4.72	0.0
July	4.49	4.50	-0.2	4.63	4.64	-0.2
August	4.83	4.73	2.1	4.72	4.73	-0.2
September	5.03	4.57	10.1	4.69	4.69	0.0
October	4.83	4.58	5.5	4.90	4.90	0.0
November	4.85	4.71	3.0	5.15	5.12	0.6
December	5.09	4.84	5.2	5.11	5.11	0.0

See footnotes at end of table.

Table FE4. Initial Estimates and Revisions for Monthly Natural Gas Average Price in the United States, 1988-1992
(Prices in Dollars per Thousand Cubic Feet) -- Continued

Month	1988			1989			1990		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Industrial Price									
January	3.15	3.18	-0.9	3.36	3.37	-0.3	3.47	3.53	-1.7
February	3.20	3.22	-0.6	3.27	3.31	-1.2	3.34	3.41	-2.1
March	3.09	3.13	-1.3	3.10	3.10	0.0	3.02	3.08	-1.9
April	2.96	2.97	-0.3	2.89	2.89	0.0	2.78	2.85	-2.5
May	2.64	2.76	-4.3	2.76	2.78	-0.7	2.65	2.68	-1.1
June	2.61	2.67	-2.2	2.69	2.67	0.7	2.55	2.58	-1.2
July	2.49	2.54	-2.0	2.62	2.68	-2.2	2.47	2.50	-1.2
August	2.64	2.66	-0.8	2.67	2.69	-0.7	2.52	2.52	0.0
September	2.69	2.70	-0.4	2.60	2.66	-2.3	2.59	2.60	-0.4
October	2.82	2.80	0.7	2.72	2.74	-0.7	2.68	2.69	-0.4
November	3.03	3.00	1.0	2.90	2.96	-2.0	3.04	3.02	0.7
December	3.24	3.31	-2.1	3.27	3.31	-1.2	3.25	3.25	0.0
Electric Utility Price									
January	2.59	2.60	-0.4	2.64	2.63	0.4	3.01	3.00	0.3
February	2.55	2.56	-0.4	2.44	2.44	0.0	2.76	2.76	0.0
March	2.31	2.32	-0.4	2.32	2.32	0.0	2.37	2.37	0.0
April	2.16	2.20	-1.8	2.31	2.31	0.0	2.29	2.28	0.4
May	2.13	2.10	1.4	2.39	2.39	0.0	2.19	2.18	0.5
June	2.16	2.16	0.0	2.40	2.40	0.0	2.16	2.16	0.0
July	2.23	2.23	0.0	2.41	2.40	0.4	2.22	2.21	0.5
August	2.37	2.36	0.4	2.38	2.38	0.0	2.23	2.23	0.0
September	2.36	2.36	0.0	2.35	2.33	0.9	2.21	2.21	0.0
October	2.40	2.40	0.0	2.39	2.39	0.0	2.45	2.45	0.0
November	2.58	2.58	0.0	2.56	2.56	0.0	2.79	2.79	0.0
December	2.57	2.57	0.0	2.85	2.85	0.0	2.89	2.89	0.0

See footnotes at end of table.

The revisions to natural gas import data generally were smaller in 1989 and 1990 than they were in 1988. The largest percentage difference for monthly imports data during both 1989 and 1990 occurred in January. The other 1989 percentage differences ranged from negative 11 percent in March to positive 9 percent in July. For 1990, the other percentage differences ranged from negative 16 percent in October to positive 10 percent in February.

In 1991, the percentage differences between initial imports estimates and final volumes were negative 20 percent or larger in October, November, and December. This discrepancy reflected the growth in Canadian imports at the end of the year, due to competitive prices for Canadian gas. The estimation methodology was adjusted to account for this growth. During 1992, the differences between initial estimates and final numbers for imports from April through October were no larger than positive or negative 5 percent.

Exports are the smallest component of disposition. Revisions to natural gas export data generally are small volume amounts that result in large percentage differences. In 1991, Mexico adopted new air pollution regulations that resulted in increased use of natural gas in that Nation, and U.S. exports to Mexico rose markedly.

That growth continued through 1992. The estimation methodology was adjusted to account for this growth.

Supplemental Gaseous Fuels

Monthly supplemental gaseous fuels are estimated from the sum of marketed production, net imports, and net withdrawals from storage. The ratio of supplemental gaseous fuels to the sum of these three components, as reported annually in the *Natural Gas Annual*, is applied to the monthly sum of these three components to calculate part of the estimate. The final estimate is the sum of this calculation and the volume of gas from coal gasification obtained from the Great Plains coal gasification plant. When annual data become final, the monthly supplemental gaseous fuels data are adjusted and become final.

For 1988, 1989, and 1990, all adjustments from initial to final supplemental gaseous fuels data were downward, except for December of 1990, which was not adjusted. Although the percentage differences are large, the supplemental gaseous fuels data represent small volumes of gas, less than 1 percent of the total supply of natural gas.

Table FE4. Initial Estimates and Revisions for Monthly Natural Gas Average Price in the United States, 1988-1992
(Prices in Dollars per Thousand Cubic Feet) -- Continued

Month	1991			1992		
	Initial Value	Final Value	Percent Change ^a	Initial Value	Final Value	Percent Change ^a
Industrial Price						
January	3.23	3.25	-0.6	3.09	3.04	1.6
February	3.03	2.97	2.0	2.79	2.78	0.4
March	2.79	2.75	1.5	2.57	2.58	-0.4
April	2.55	2.68	-4.9	2.49	2.54	-2.0
May	2.38	2.40	-0.8	2.41	2.44	-1.2
June	2.33	2.34	-0.4	2.51	2.53	-0.8
July	2.28	2.23	2.2	2.50	2.54	-1.6
August	2.31	2.29	0.9	2.67	2.71	-1.5
September	2.45	2.40	2.1	2.79	2.82	-1.1
October	2.69	2.69	0.0	3.17	3.21	-1.2
November	2.77	2.84	-2.5	3.23	3.26	-0.9
December	3.03	3.09	-1.9	3.34	3.38	-1.2
Electric Utility Price						
January	2.71	2.70	0.4	2.49	2.49	0.0
February	2.35	2.35	0.0	2.03	2.03	0.0
March	2.21	2.21	0.0	1.99	1.99	0.0
April	2.10	2.10	0.0	2.06	2.07	-0.5
May	2.01	2.01	0.0	2.11	2.11	0.0
June	1.94	1.94	0.0	2.18	2.18	0.0
July	1.88	1.88	0.0	2.15	2.13	0.9
August	1.96	1.96	0.0	2.42	2.42	0.0
September	2.19	2.19	0.0	2.51	2.51	0.0
October	2.35	2.35	0.0	3.04	3.04	0.0
November	2.43	2.43	0.0	2.87	2.87	0.0
December	2.65	2.64	0.4	2.81	2.81	0.0

^a The percent change is the initial value minus the final value, divided by the final value.

Note: The monthly volumes may not sum to total volume because the initial estimates in the early months of the year may have been revised before the annual total is first published.

Source: Energy Information Administration, *Natural Gas Monthly*, 1988 through 1992.

The EIA reexamined the calculation of the ratio used to make part of the estimate and determined that it needed to be adjusted. The change was made for 1991, and the estimates improved. The final 1991 volumes required either no adjustment or an adjustment of 1 or 2 billion cubic feet from the initial reports. With the exception of the January volume, the 1992 estimates also were not adjusted or adjusted by only 1 or 2 billion cubic feet.

Consumption in Prior Months

Consumption in prior months is estimated from reported data. The initial and final estimates for the data are shown in Table FE3. The percentage difference is calculated by taking the difference between the initial value and the final value, dividing it by the final value, and multiplying the result by 100.

Deliveries to consumers represent about 91 percent of total annual consumption. Lease and plant fuel data

represent about 6 percent of total annual consumption and are initially estimated from monthly marketed production data. Pipeline fuel represents the smallest component of annual consumption, approximately 3 percent. It is initially estimated as a percent of total consumption. Monthly consumption numbers are revised to agree with data published in the *Natural Gas Annual* and shown in the issue of the *Natural Gas Monthly* published immediately after the annual report is released.

Deliveries to consumers in the residential, commercial, and industrial sectors are estimated from reports on the Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers," a sample survey of natural gas companies that deliver gas to consumers. The sample is drawn from the respondents to the annual Form EIA-176. The sample design and estimation procedures are described in detail in "Statistical Considerations," Appendix C of the *Natural Gas Monthly*. Briefly, the sample design is stratified so that within each State, all companies handling large amounts of gas respond to the survey, and a sample of companies

handling small amounts of gas also respond. In some States where stratification is not possible, all companies report, and the reported data are shown without any estimation adjustments.

Deliveries to electric utilities are reported on the Form EIA-759, "Monthly Power Plant Report." This survey requires all electric utilities to report; no sampling or estimation procedures are needed.

Deliveries to Consumers

The percentage differences between the final and initial monthly estimates for volumes of natural gas delivered to each of the consuming sectors are shown in Table FE3 and Figures FE3 through FE6.

Residential. Generally, the revisions to residential consumption estimates were very small. For 1988, a large difference occurred in January, with a percentage difference of negative 11 percent. This difference may have occurred because January was the first month of data collection with a new respondent sample and with a revised form. The accuracy of reporting by respondents improved in the other months of the year. Other 1988 monthly percentage differences ranged from negative 3 percent in February to positive 2 percent in May. The percentage differences ranged from negative 1 percent to positive 4 percent in 1989 and from negative 1 percent to positive 3 percent in 1990. They varied by no more than plus or minus 1 percent in 1991 and 1992, except in November 1992 when the difference was 2 percent.

Commercial. In 1988, large percentage differences occurred in January and February. As in the residential sector, these differences may have been due to reporting on the revised form. For the rest of the year, the monthly percentage differences ranged from negative 2 percent to positive 6 percent. For 1989, the monthly adjustments to commercial deliveries were all small, with percentage differences ranging from negative 3 percent to positive 1 percent. The largest difference in 1990 was a negative 4 percent in May, and in 1991 it was a positive 4 percent in October. For 1992, differences ranged from negative 2 percent to positive 2 percent.

Industrial. In 1988, the percentage differences for industrial monthly consumption estimates ranged from negative 3 percent to positive 17 percent. In subsequent years they improved. For 1989, the percent changes to final industrial estimates were no larger than positive or negative 2 percent, except in October which showed a negative 9 percentage difference. A problem of misreporting was identified that month and subsequently corrected.

In nearly all months of 1990, the percentage differences between final and initial industrial estimates were larger than they were in the previous year. Problems of misunderstanding of reporting instructions by respondents were identified and addressed in 1990. As a result of these efforts, the percentage differences between initial estimates and the final estimates in the last half of 1991 were smaller than in 1990. In April there was a positive 8-percent difference. A problem of misreporting was identified that month and subsequently corrected. Generally, the differences continued to be small in 1992.

Electric Utilities. As discussed above, data on consumption by electric utilities are taken from reports to the Form EIA-759, filed by the utilities, and no estimation procedures are needed. Usually these data are not revised. The few revisions that are required are nearly always very small. Over the 5-year period, these percentage differences were no larger than positive or negative 2 percent.

Lease and Plant Fuel.

Consumption of natural gas in lease operations and by natural gas processing plants represents about 6 percent of total annual consumption. Monthly lease and plant fuel consumption is initially estimated from monthly marketed production. The annual ratio of lease and plant fuel consumption to marketed production, as published in the *Natural Gas Annual*, is applied to the monthly marketed production number to calculate an estimate. The ratio is calculated from the most recently available annual data. When annual data for lease and plant fuel become final, the monthly lease and plant fuel data are adjusted and become final. Across the 5-year period, the percentage differences between initial and final volumes of lease and plant fuel consumption varied from negative 16 percent to positive 13 percent.

Beginning in 1991, the final estimate of monthly lease and plant fuel data includes reported lease fuel data. Lease fuel data were reported for the first time in 1991 on the Form EIA-627. The respondents—energy, tax, or conservation agencies in the natural gas producing States—provide a distribution by month of their annual lease fuel data. Plant fuel data are reported annually on the Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production," beginning in 1990. A monthly distribution is not reported for plant fuel. Annual plant fuel consumption is adjusted to the monthly distribution of the estimates. Previously, annual lease fuel consumption (prior to 1991) and plant fuel consumption (prior to 1990) were estimated from reports to the Form EIA-176, and the monthly numbers

were adjusted to these estimates. See Appendix A, "Summary of Data Collection Operations and Report Methodology," of the *Natural Gas Annual* for a more detailed discussion of the reporting of lease and plant fuel data.

Pipeline Fuel

Pipeline fuel data are the smallest component of consumption, representing 3 percent of total consumption annually. To initially estimate monthly consumption of natural gas by pipelines, the most recent annual ratio of pipeline fuel consumption to total consumption, as published in the *Natural Gas Annual*, is applied to the monthly total consumption. When annual data for pipeline fuel become final, the revised annual ratio is calculated and is applied to each month's revised total consumption number to compute final monthly pipeline fuel consumption estimates.

The differences between initial and final pipeline fuel monthly estimates from 1988 to 1992 were small volume amounts. In August and October of 1991, the differences were positive 60 and 59 percent, respectively. A computation error was discovered in those months and was subsequently corrected.

Average Prices

The differences between initial and final average prices for natural gas are shown in Table FE4.

Wellhead Prices

An initial estimate of the wellhead price is calculated based on the statistical relationships between U.S. monthly wellhead gas prices and the monthly composite spot wellhead prices published in *Natural Gas Week*. The estimate is prepared using the same methodology that generates monthly price estimates for the EIA publication, *Short-Term Energy Outlook*. The initial estimate is the latest monthly estimate presented.

Initial wellhead prices are adjusted the following month based on the change in the production-weighted gas price from 4 States: Mississippi, New Mexico, Oklahoma and Texas. See Appendix A, "Explanatory Notes," of the *Natural Gas Monthly* for further discussion of wellhead values.

Final monthly wellhead prices are calculated from reports to the Form EIA-627. (This survey is discussed above in the section on marketed production.) The

wellhead value reported on the form is divided by the associated marketed production volume to compute the average price. See Appendix A, "Summary of Data Collection Operations and Report Methodology," of the *Natural Gas Annual* for a more detailed discussion of the reporting of wellhead values and prices.

As stated previously, respondents to the Form EIA-627 reported only annual wellhead values from 1988 to 1992. The percentage distribution of the initial estimates for wellhead values across the 12 months was applied to the annual wellhead value to estimate monthly wellhead values. These estimates were then used to calculate final monthly price estimates. Over the 5-year period, most percentage differences between initial and final wellhead prices ranged from positive 14 percent to negative 7 percent. Beginning with the collection of data for 1994, the State offices filing Form EIA-627 report actual monthly wellhead values.

City Gate Prices

The city gate price is the price at the point or measuring station at which a gas distribution company receives gas from a pipeline company or transmission system. These prices are reported monthly on the sample survey Form EIA-857, described above in the section on consumption in prior months. City gate prices are not reported on an annual survey form. Annual prices are calculated by dividing the sum of the revenues for twelve months by the sum of the volumes for twelve months.

During 1988, the differences between initial and final city gate prices ranged from negative 5 percent to less than negative 1 percent. In subsequent years, these differences were no larger than positive or negative 1 percent, with 3 exceptions. The difference in October 1991 was 6 percent, and in 1992 the difference was 2 percent in February and negative 2 percent in November.

Residential, Commercial, and Industrial Prices

Revenues for deliveries to residential, commercial, and industrial consumers are also reported on the Form EIA-857 with their associated volume. Average prices are calculated by dividing total revenue by total volume. Monthly prices are revised to agree with data published in the *Natural Gas Annual* and shown in the issue of the *Natural Gas Monthly* published immediately after the annual report is released. Average prices for deliveries to consumers are calculated for onsystem sales only. Prices for gas delivered for the account of others are not available.

As the natural gas industry has moved toward open access, there has been an increase in the demand for the service of delivering gas for others. This type of arrangement means that someone other than the respondent to the Form EIA-857 actually owns and sells the gas. For example, a consumer contracts directly with a gas well operator to purchase gas supplies, while a pipeline or local distribution company (the Form EIA-857 respondent) provides only the transmission service. The respondents to the Form EIA-857 do not know the price of the gas that they transport for others.

In 1992, 70 percent of the volume of gas delivered to industrials was delivered for the account of others. Thus the 1992 price data represent information for only 30 percent of deliveries to industrials. In the commercial sector, the 1992 price data represent information for 83 percent of deliveries.

In the residential, commercial and industrial sectors, when annual data become available, the percentage distribution across months for the reported revenue is applied to the annual revenue amount to estimate monthly revenue. An average price is then calculated using this revenue and the similarly estimated volume amounts.

Residential. Prices of gas delivered to residential consumers are the highest of all of the consuming sectors and generally show the smallest variation from year to year. Across the 5-year period, the percentage differences between initial and final residential prices were no larger than positive or negative 1 percent.

Commercial. Generally, the percentage differences between initial and final commercial prices were small. The difference in January 1988 was 6 percent. As noted in the discussion above on revisions to volumes, this difference may have occurred because this was the first month of data collection using a revised form.

From February 1988 through the end of 1992, the differences for the commercial sector were no larger than

positive or negative 2 percent, except in the latter months of 1991 and January 1992. Larger differences occurred from September 1991 through January 1992, primarily due to problems of misreporting in the State of California. Changes had been made to the State Law governing sales and transportation of natural gas. Because of corresponding changes in company records, respondents had a difficult time correctly compiling information for submission to EIA. After those difficulties were resolved, the reporting of commercial price improved.

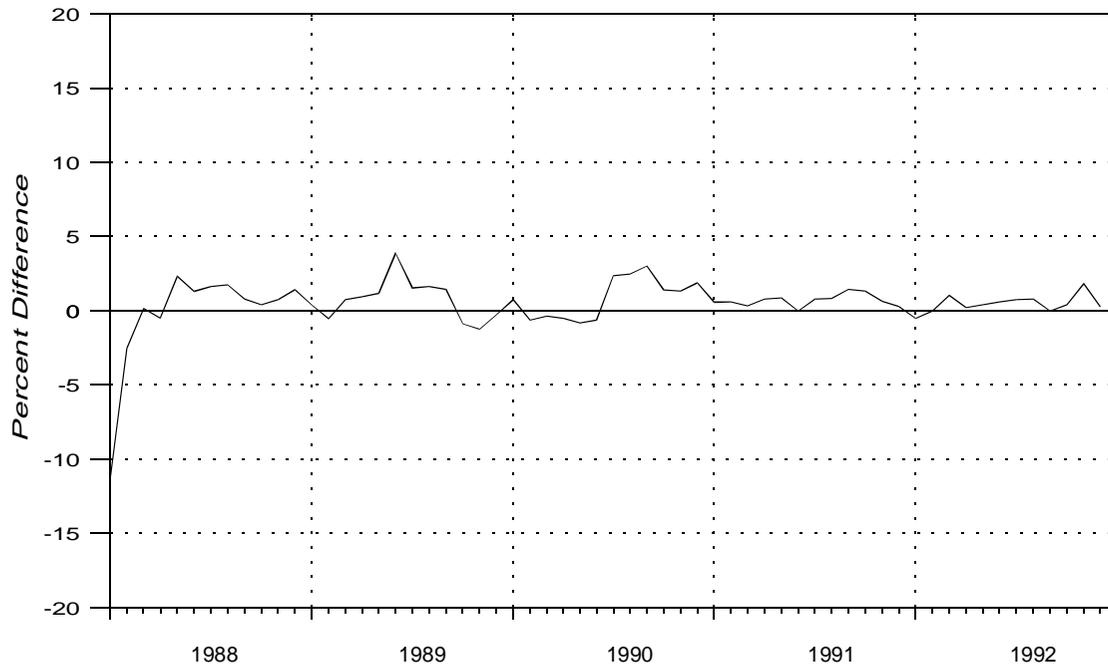
Industrial. As previously explained, the prices for deliveries to industrial consumers are only for onsystem sales of natural gas. The percent of deliveries to industrials represented by onsystem sales was 43 percent in 1988 and dropped to 30 percent by 1992. During the 5-year period, the percentage differences between initial and final prices for deliveries of gas to industrials were no larger than positive or negative 2 percent, except for May 1988 (-4 percent), April 1990 (-3 percent), April 1991 (-5 percent), and November 1991 (-3 percent).

Electric Utility Prices

Electric utility prices are taken from reports by the utilities on the Federal Energy Regulatory Commission (FERC) Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." Revenues are reported in cents per million Btu and converted to dollars per thousand cubic feet of natural gas. See the EIA annual report *Cost and Quality of Fuels for Electric Utility Plants* for more detailed information about prices of natural gas delivered to electric utilities.

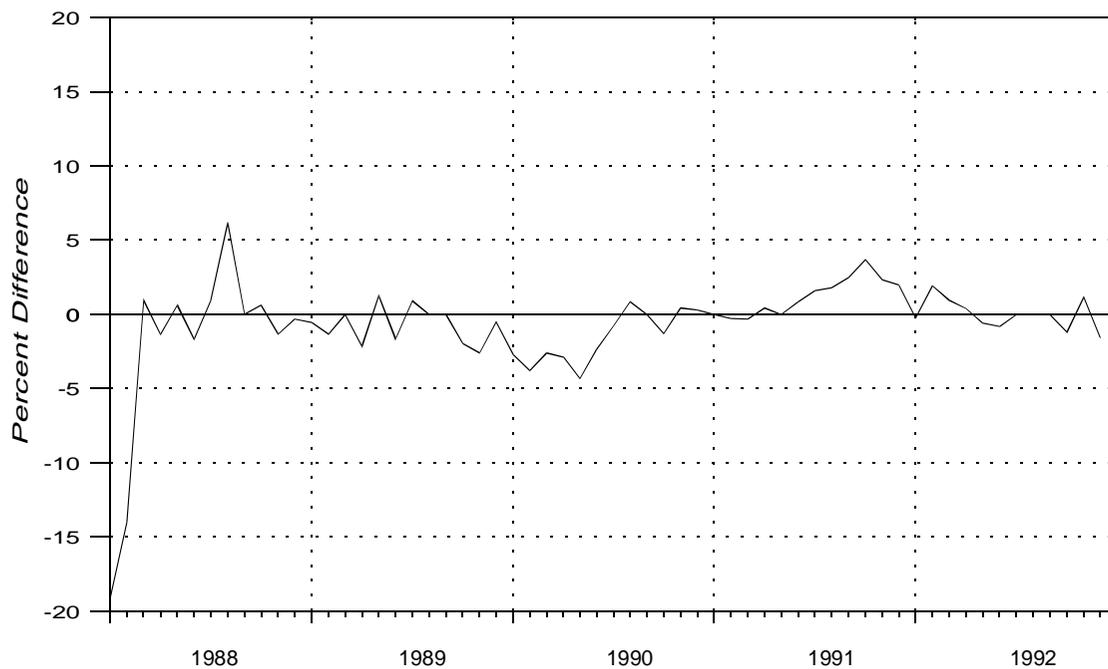
Electric utilities. Prices for deliveries to electric utilities are reported on the FERC Form-423. Nearly all of the percentage differences from 1988 to 1992 were no larger than positive or negative 1 percent.

Figure FE3. Percent Difference Between Initial and Final Monthly Values for Natural Gas Delivered to Residential Consumers, 1988-1992



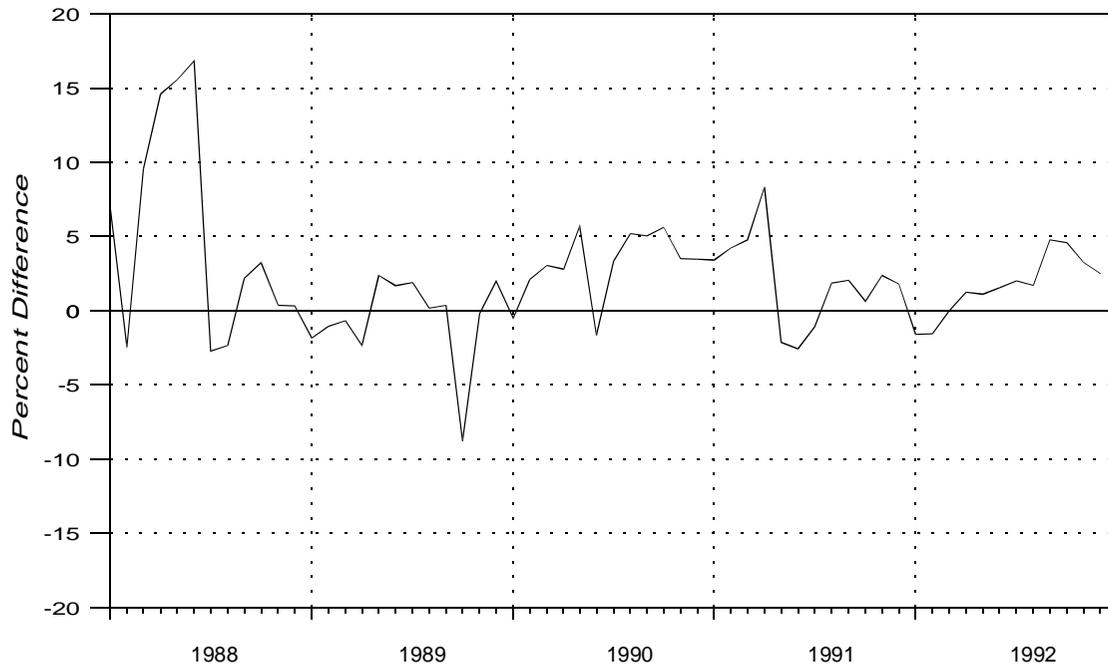
Source: Energy Information Administration, *Natural Gas Monthly*, 1988 through 1992.

Figure FE4. Percent Difference Between Initial and Final Monthly Values for Natural Gas Delivered to Commercial Consumers, 1988-1992



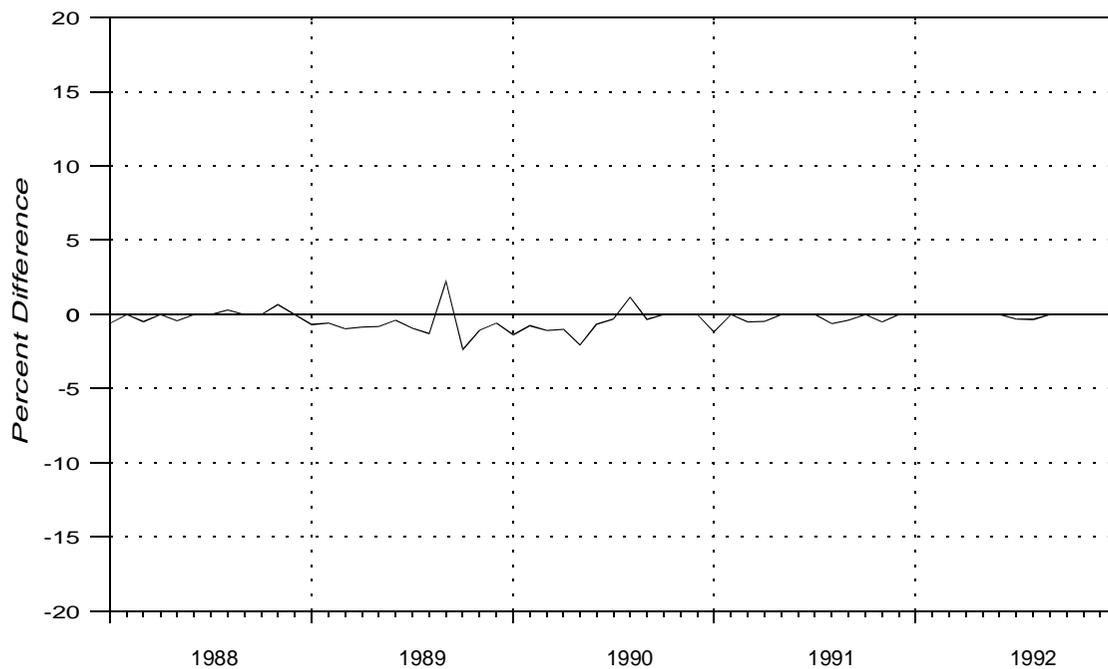
Source: Energy Information Administration, *Natural Gas Monthly*, 1988 through 1992.

Figure FE5. Percent Difference Between Initial and Final Monthly Values for Natural Gas Delivered to Industrial Consumers, 1988-1992



Source: Energy Information Administration, *Natural Gas Monthly*, 1988 through 1992.

Figure FE6. Percent Difference Between Initial and Final Monthly Values for Natural Gas Delivered to Electric Utility Consumers, 1988-1992



Source: Energy Information Administration, *Natural Gas Monthly*, 1988 through 1992.